

FAA AST

Office of Commercial Space Transportation

NASA Supply Chain QA Conference

Introduction to AST

Pam Melroy

Acting Deputy Associate Administrator

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**Federal Aviation
Administration**



Introduction to AST – Background

- The U.S. space program today has 3 sectors:
 - Civil (NASA, NOAA)
 - Military (Air Force, NRO, etc)
 - Commercial
- The commercial sector was created in 1984 with the passage of the Commercial Space Launch Act.
- Regulatory oversight for the commercial sector was given to the Office of Commercial Space Transportation (AST), which was originally a staff office within the Department of Transportation.
- Today, we are one of four lines of business within the FAA.



Our Dual Mission:



- *Ensure the protection of the public, property, and the national security and foreign policy interests of the United States during commercial launch and reentry activities*
- *Encourage, facilitate, and promote U.S. commercial space transportation.*



What We Do

- Issue Licenses or Experimental Permits to U.S. citizens for launch operations of rockets exceeding the limit of amateur rocket performance
 - AST has licensed 210 launches in the past 25 years
 - Perfect safety record for public and property
- Issue Licenses for operation of commercial Spaceports
 - Eight non-federal Spaceports licensed to date
- Issue Licenses for reentry operations of orbital vehicles
 - Dragon reentry on 8 December 2010 marked the first such licensed activity
- Issue Safety Approvals for activities designed to enhance the safety of commercial space flight



Who Needs a License?

They Do!



Air Launch



Sea Launch



Launch Sites



Ground Launch



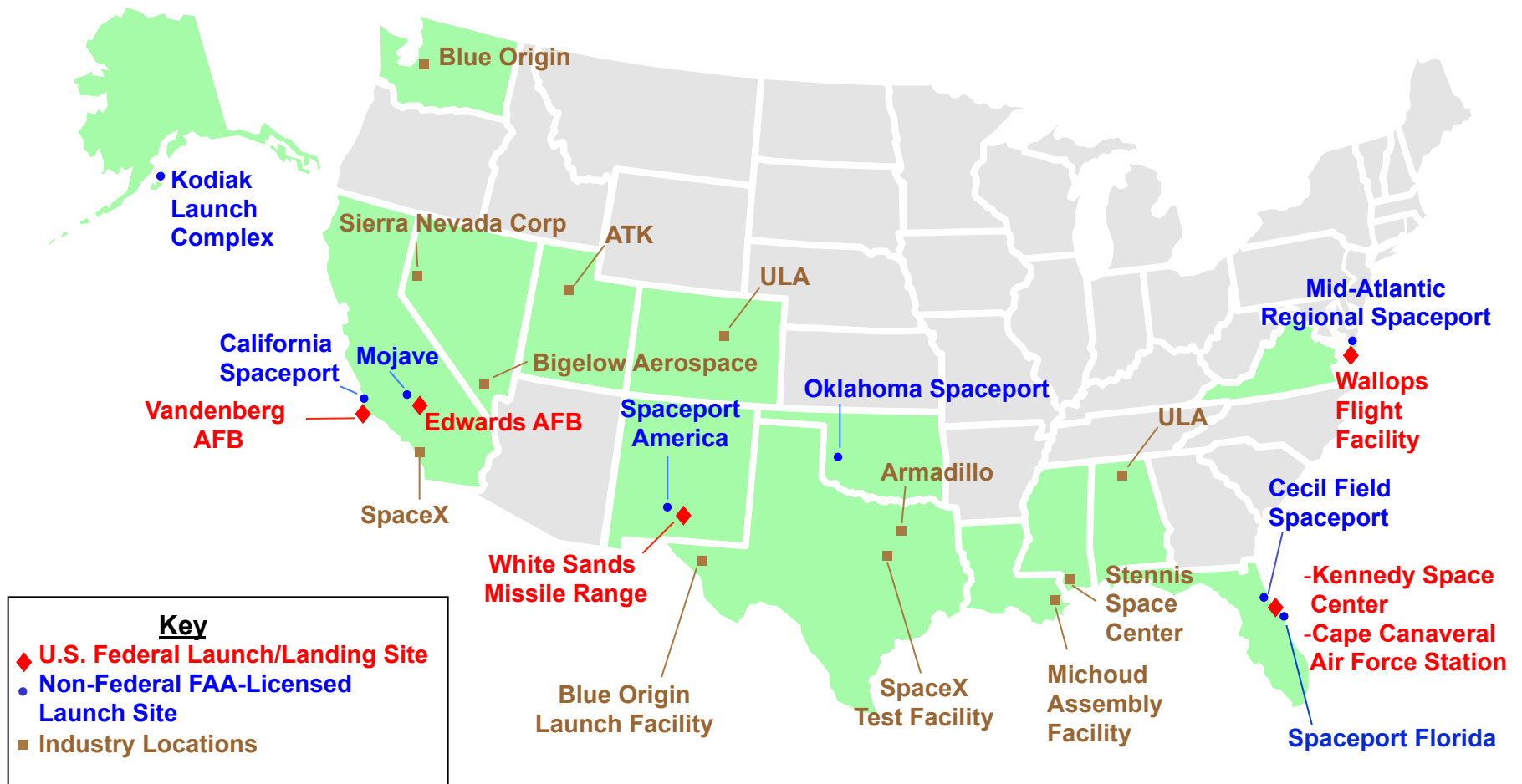
Reusable Launch Vehicles



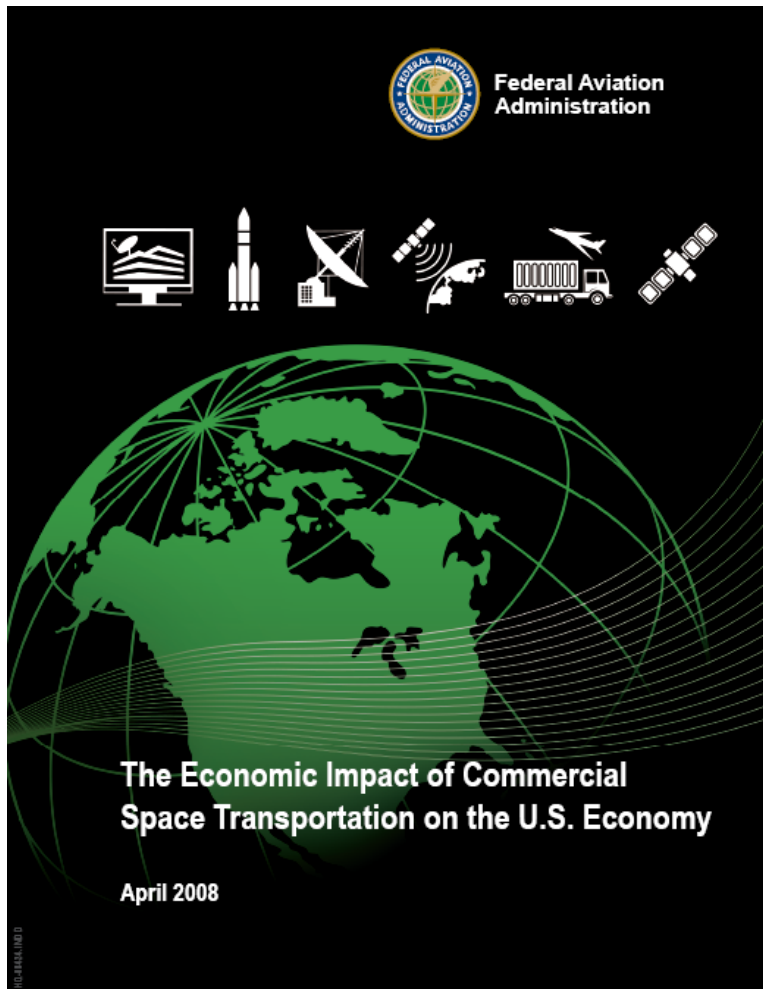
Suborbital Rockets

Since 1987: 210 licensed launches without any fatalities or property damage to the uninvolved public

U.S. Commercial Space Industry



A Growing Industry



Commercial Space Transportation impacts on the American Economy

2006:

\$139.3 billion in economic activity

\$35.7 billion in earnings

729,000 jobs

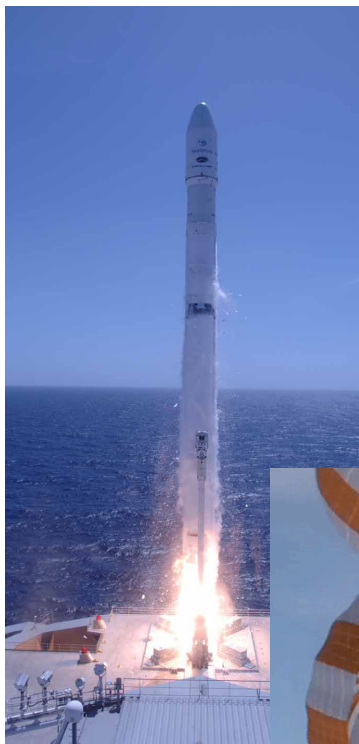
2009:

\$208.3 billion in economic activity

\$53.3 billion in earnings

1,029,440 jobs

4 Licensed Launches/Reentries in FY2012



**Sea Launch
Zenit-3SL**



SpaceX Dragon Reentry



SpaceX Falcon 9



Sea Launch Zenit-3SL

3 Licensed Launches/Reentries in first month of FY2013!



SpaceX Falcon 9



SpaceX Dragon Reentry (planned)



Armadillo Aerospace Stig-B

Space Station Resupply....

Commercial Takes Over

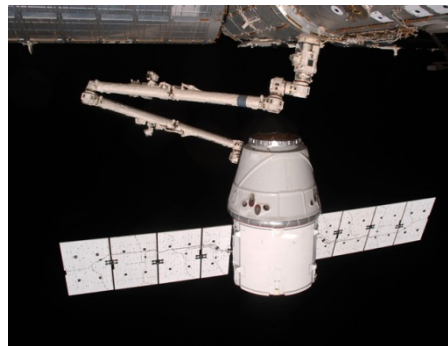
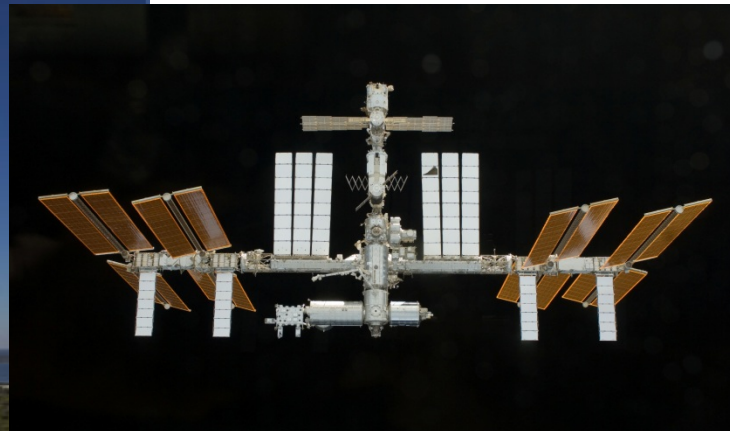


SPACEX

Orbital



Space X – FAA-Licensed Launch and Reentry of Dragon to ISS



May 25, 2012 - First Commercial Cargo Delivery to ISS
(Second delivery on October 10th, 2012)

NASA Flight Opportunities Program suborbital research



Yes, There IS a Commercial Market



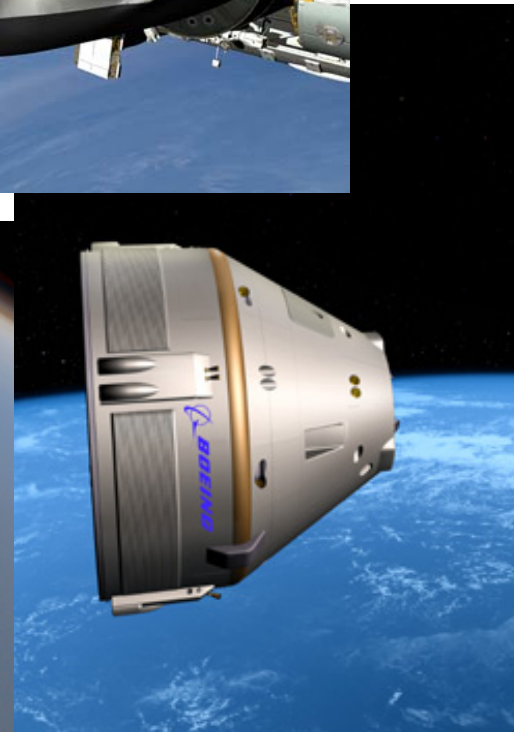
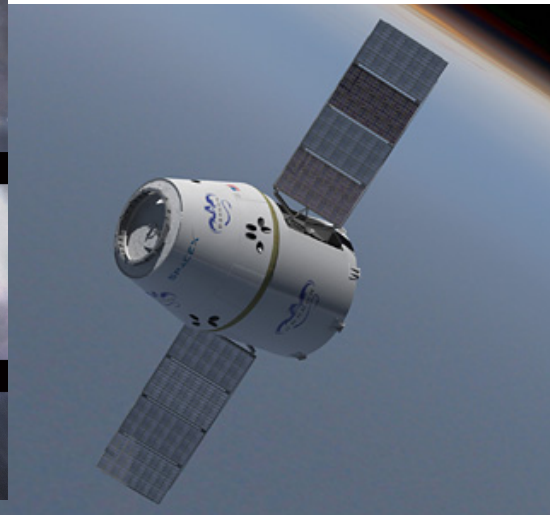
- Virgin Galactic plans to operate a fleet of 5 vehicles
- Ticket price is \$200K per person
- At least 500 deposits have been received



Spaceport America in New Mexico



On the Horizon: Commercial Crew Spacecraft



We Also...

Issue Safety Approvals

- NASTAR Training Program
- Zero-G Training Flights
- SpaceTec Educational Program



Support R&D

We have established a Commercial Space Transportation Center of Excellence. The FAA will provide \$1M per year in matching funds. New Mexico State University is the Administrative Lead. Other team members include Stanford University, the University of Colorado, the University of Texas Medical Branch, New Mexico Institute of Mining & Technology, Florida Institute of Technology, and the Florida Center for Advanced Aero Propulsion.

Award Spaceport Grants

- An Automated Weather Observing System for Spaceport America
- A Rocket Motor Storage Facility for the Alaska Aerospace Corporation
- An Emergency Response Vehicle for Mojave Air & Space Port
- Development of a Spaceport Master Plan for Cecil Field
- And Others

The Future: Occupant Safety

- By Congressional direction, the FAA may not propose regulations covering occupant safety until October 2015. Current rules only cover safety of the uninvolved public.
- However, we have a team thinking about it now to be prepared, and we'd like input from technical folks from industry and government to help us.
- We are hosting a series of one-hour public telecons on specific technical topics to be held about once a month. We are using our industry advisory committee, COMSTAC, to help us.
- Two telecons have been conducted, next on Oct 23rd...look on AST's website if you want more info, under "Meetings and Events":

http://www.faa.gov/about/office_org/headquarters_offices/ast/



The FAA Office of Commercial Space Transportation: Prepared to Regulate and Facilitate the Commercial Space Industry